

**SYSTEM AND METHOD FOR  
TRANSCODING  
WITH ADAPTIVE BIT RATE CONTROL**

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**ABSTRACT OF THE INVENTION**

A system and method are provided for adaptive rate control in the transcoding of video streams. The method comprises: accepting frames of an input MPEG encoded video stream; decoding the video stream; determining video stream complexity; for each frame, calculating 10 an output video stream quantization parameter ( $Qo$ ) responsive to determined video stream complexity; and, encoding the output video stream into a protocol using  $Qo$ . Some aspects further comprise accepting a target bit rate ratio ( $r$ ) for transcoding that is equal to the ratio of the target output video stream number of bits per frame ( $No$ ), to the input 15 video stream number of bits per frame ( $Ni$ ). Then,  $Qo$  is also calculated in response to the value of  $r$ . More explicitly,  $Qo$  is calculated in response to a complexity ratio of: an accumulated complexity in the output video stream, to an accumulated complexity in the input video stream.